
Program Mission

To preserve, protect and enhance the air quality of the state for current and future generations; to return areas with poor air quality to levels adequate to protect health and the environment as expeditiously as possible; and to prevent any areas of the state with acceptable air quality from reaching air contaminant levels that are not protective of human health and the environment.

Environmental Threats

Air quality concerns come in three forms: public health, environment and quality of life. Fourteen areas of Washington State were designated as violating national, health-based, ambient air quality standards for six chemicals known as “criteria” pollutants. Over 2.3 million people live within these areas. Additionally, special monitoring studies show the potential for violations in several new areas such as Wenatchee, Ellensburg, Colville and parts of the Columbia plateau. Although air quality has improved significantly in the state’s major urban areas, most remain close to violating one or more federal air quality standards. Population growth, more cars and economic expansion will continue to push vehicle use and emissions higher. It will take vigilance and the combined efforts of citizens, business and government to sustain our air quality gains.

In addition to the six criteria pollutants, hundreds of other chemicals, known as toxic or hazardous air pollutants, enter the atmosphere from a wide variety of sources but are not subject to ambient, health-based standards. Because of limited air quality data, the level of public health and environmental damage caused by toxic air pollutants is largely unknown.

Air pollution causes lung disease and worsens existing respiratory and cardiopulmonary disease, sometimes hastening death for persons afflicted with such diseases. Best available data suggest that approximately 1,400 people die each year in Washington due to exposure to fine particles in the air they breathe. Hundreds of studies find that short and long-term exposures to air pollution increase respiratory symptoms, emergency room visits, hospitalizations and medication use; decrease lung function; and create school absences, work loss days, and restricted activity days.

Air pollution increases chronic respiratory illness; increases the overall death rate; increases the likelihood of contracting cancer; and decreases lung function in children, pre-disposing them to chronic obstructive pulmonary disease as adults. Based on national studies, it is estimated that Washington citizens save over \$1.5 billion in annual medical costs because the air is cleaner than it was in 1990.

Air pollution affects the environment and quality of life in many ways, including: damage to soils, water, crops, vegetation, manmade materials, property, animals, and wildlife; impairment of visibility, climate and weather; and hazards to transportation. It also adversely affects economic values and personal comfort and well-being.

Program Origin and Laws

Widespread citizen concerns about air pollution and its effects on public health and quality of life caused Congress and state legislatures to pass broad air quality protection laws. In 1990, Washington residents ranked air pollution the number one environmental threat in the state. More recent polls rank air quality near the top of citizen environmental concerns.

Chapter 70.94 RCW, Clean Air Act

Air quality regulatory authority for Ecology (and other state and local agencies) comes primarily from the state Clean Air Act, which establishes philosophy, goals and specific control strategies for selected air pollution sources. This law recognizes that there are many and varied sources of air pollution and directs government agencies to approach problems and solutions comprehensively. It directs its attention to four broad categories of air pollution: motor vehicles, industry, wood stoves and fireplaces and outdoor burning. The law contains detailed, prescriptive programs that specify performance standards, emission limits, fees and constraints on regulatory agencies.

Chapter 70.120 RCW, Motor Vehicle Emission Control

This law establishes authority for motor vehicle emission testing.

Much of the content of Washington’s air quality laws is based on the goals, objectives, standards and control requirements of the federal Clean Air Act.

Constituents/Stakeholders

Motor Vehicles

Motorists, transportation agencies, oil industry, major employers in the nine most populous counties, auto repair industry.

Industry

Large businesses such as pulp and paper, aluminum, power plants and oil refineries; small businesses such as dry cleaners, wood products, gasoline marketing and printers; agriculture, including food processing, grain handling, feedlots and fertilizer manufacture; and associated trade organizations.

Wood Stoves

Wood stove users, manufacturers, distributors /retailers, home construction industry.

Outdoor Burning

Timber industry, agriculture, developers, homeowners.

Stakeholders also include federal, state and local government; environmental and public health advocates; and the seven local air agencies, which manage a majority of the air pollution sources within their jurisdictions. Ecology provides financial and technical assistance to the local air agencies.

Major Activities

Characterize Air Quality

To characterize air quality, we must develop an understanding of how much pollution is in the air, where it comes from and how it moves in the environment. Characterizing air quality consists of three basic functions: monitoring ambient air quality, inventorying emissions and modeling the movements of pollution through the atmosphere.

Ambient monitoring measures the status of air quality throughout the state to assess trends, compliance with federal and state air quality standards, effectiveness of control strategies and attainment plans, health effects and environmental damage; respond to citizen complaints; evaluate specific geographic or hot-spot air quality concerns; and create environmental indicators.

An emission inventory is a catalog of sources of air pollution and the emissions from those sources. Inventory data is critical to understanding the causes of air pollution problems and creating appropriate solutions.

Meteorological forecasting and dispersion modeling of air pollutants are essential to understanding the movement and buildup of air pollution; the carrying capacity of airsheds; the interaction of pollutants; and the location of maximum impact of sources of pollution.

Design Solutions

Designing solutions means getting the right, most cost-effective solution in the right place at the right time. Designing the best solutions to air quality problems includes preparing comprehensive plans to achieve and maintain good air quality, identifying and evaluating clean air strategies and writing rules. Specific tasks include: analyzing costs and benefits of air quality strategies; identifying control or prevention options and assessing their viability; meeting regulatory reform commitments; developing and modifying rules; researching emission reduction potential, health and environmental effects of pollution and atmospheric chemistry; assessing risk.

Implement Solutions

Implementing solutions is the work most directly seen by the public. Emission reduction programs are one of the more traditional regulatory methods for controlling air pollution. Control strategies include motor vehicle emission testing, federal operating permits and new source permits for industries, outdoor burning restrictions and industrial source registration. This category of activity also includes federal and state air quality grants to local air pollution control agencies.

Measure Effectiveness

To measure effectiveness, we must track results of decisions and strategies and modify them to better meet priorities, objectives, and changing needs of society. The number of citizens living in areas now measuring unhealthy air as defined by federal standards has been reduced from over 2.3 million in 1990 to less than 100,000 in 1998. Of 14 nonattainment areas in Washington, five now fully comply with national requirements and nine have air quality that meets federal standards. No new nonattainment areas have been identified; however, in several eastern Washington cities, we have recently measured air pollution levels high enough to trigger violations of federal standards. More specific measurements of the success of Ecology's air quality activities include:

- ❖ An evaluation of mobile sources of air pollution analyzed 17 methods for reducing pollution from motor vehicles. This analysis helped stakeholders and Ecology identify and select cost-effective and least burdensome solutions to carbon monoxide and ozone air quality problems. The analysis provided the basis for removing the oxygenated gasoline requirement in central Puget Sound and Clark County, saving motorists and industry over \$50 million a year.

❖ Windblown dust studies on the Columbia plateau provided the data to persuade EPA to remove a nonattainment designation for large parts of Benton, Franklin and Walla Walla counties. Ecology successfully argued that those areas should not suffer federal restrictions because of air pollution from natural causes.

❖ The motor vehicle Emission Check Program has reduced pollution from cars and trucks in the Vancouver, Spokane and Puget Sound areas by 15 percent, or 146,000 tons per year, contributing greatly to improved air quality.

❖ In 1998, Ecology issued 69 permits for industrial air pollution sources, preventing the release of approximately 7,500 tons of air pollution. The air operating permit program bundles all of a facility's requirements into a single document. While the operating permit program does not impose new controls, it has helped identify compliance problems at facilities. In one case, this resulted in 98 percent lower emissions.

❖ High-quality air pollution data allow accurate assessment of pollution levels in much of the state. Presently, the data show that air quality trends are improving throughout the state. Continued monitoring will help us track trend changes as population and motor vehicle use grow.

❖ Accurate emission inventories have provided the basis to exempt over 100 sources from the federal operating permit program. Emission inventory refinements have reduced fees and eliminated regulatory requirements for several hundred smaller agricultural and industrial sources.

❖ A public involvement campaign in Wenatchee helped local citizens recognize the impact of smoke on air quality. Citizens then took action to curtail wood stove and outdoor burning. To date, these efforts have prevented violations of federal standards and the imposition of regulatory programs.

❖ Single industry, non-enforcement information and technical assistance campaigns for auto repair shops, printers, dry cleaners, hospitals and others have increased understanding of regulations, reduced emissions and improved compliance while saving businesses money and reducing the need for enforcement.

❖ All 14 nonattainment areas and maintenance areas (former nonattainment areas) met air quality standards for the first time since monitoring began over 30 years ago.

❖ Improved weather forecasting capabilities have enabled Ecology to better protect citizens from toxic smoke and high levels of air pollution. The improved system allows Ecology to provide better information for declaring "no burn" days for silvicultural and agricultural burning; to forecast smoke plume trajectories from chemical fires or other emergencies; to better analyze high pollution events; and to better predict the effects of new sources or regulatory decisions.

❖ Ecology's Air Quality Program staff have implemented efficiency measures designed to save the state money and improve government service. Examples include:

— Staff identified and implemented a more cost-effective system for relaying air monitoring data over telecommunication lines, for a projected savings of \$19,000 per year after a one-time investment of \$10,000. Ecology's air monitoring system consists of 80 remote air pollution monitors and computers located around the state. A main computer in Lacey was linked to the remote monitors via multiple phone lines and phone companies. The main computer "called" the remote monitors once each hour, 24 hours per day for pollution data. Staff determined it would be more efficient to piggyback the air monitoring data onto the agency's wide area network. Aside from the monetary savings, the system reconfiguration permits collection of more field data and has proven to be more stable and reliable.

— Citizens in Vancouver are required to get their vehicles tested for emissions of air pollutants. Recently, a new gas cap test was added to the series of tests, causing citizens to wait up to 45 minutes in line. Ecology staff worked with the vendor to reduce the new gas cap emission test to just one minute, keeping the average inspection time around five to seven minutes and the wait-in-line time around five to eight minutes. The vendor improved staff training and increased testing accuracy through enhanced software.

Major Issues

I-695 Removes 45 Percent of State Clean Air Funding

When the voters passed Initiative 695, one probably unintended consequence was the elimination of a \$2.00 per vehicle annual tax called the clean air excise tax. This tax pays for nearly half of the state's efforts to protect the air we breathe.

Elimination of the clean air excise tax means \$17.1 million from the air pollution control account is no longer available statewide for the 99-01 biennium. As a result, Washington can do less to control air pollution and can expect more of it. The primary cost of dirty air will be to people's health. Having clean air saves billions of dollars in health costs. Ultimately, our economy will suffer, too. As the ability to design and implement tailored solutions to local problems is lost, less flexible and more costly solutions will have to be employed. In addition to the obvious health issues, failure to meet federal clean air standards will result in expensive regulatory requirements for business and individuals and the potential loss of federal transportation funds for the state's roads unless the funding issue is resolved.

Growth Threatens Air Quality Gains

Population growth and human activity will continue to challenge air quality improvements. Because vehicle use has grown three times faster than population, the toughest challenge will be to find ways to contain vehicle emissions. Without sound clean air strategies, the resulting pollution may overtake and reverse the progress that has been made. The public will need to understand education campaigns highlighting the impacts of increased vehicle usage and continued partnering with other state and local transportation agencies to implement clean air strategies can help alleviate problems associated with growth.

Air pollution levels in Washington are within one percent of violating federal standards for smog (ozone), three percent for carbon monoxide and seven percent for fine particles.

Changes to Federal Standards for Particulate Matter and Ozone

EPA adopted new federal standards for fine particulate matter and ozone in July 1997. Dozens of recent health studies show that historical federal standards for ozone and fine particles are not adequate to protect public health. EPA and health professionals estimate that fine particles cause premature death for over 40,000 Americans each year — 1,400 each year in Washington. This is more than those who die in automobile accidents.

Implementation of the new ozone standard was subsequently halted by a federal court, and EPA recently reinstated the previous standard. All areas of Washington are currently meeting this standard, although population growth and increasing motor vehicle use will continue to make meeting it a challenge.

The federal court also overturned the new standard for fine particulate matter, which was based on even smaller particle size than the present one. While the court decision is under appeal, EPA is still funding the new monitoring needed for the new standard. Ecology will invest substantial resources to establish ambient monitoring and emission factors for the new standard, and control and pollution prevention strategies will have to be reevaluated in light of it.

Visibility and Regional Haze

The public responds strongly to clear air or the lack of it. Citizens complain when their views of Mt. Rainier, the Olympics or the Columbia Gorge are obstructed by air pollution. Regional haze and visibility degradation also affect tourism, restrain economic growth, and diminish the quality of life for Washington residents. Ecology is reviewing its visibility data and the state's federally required visibility protection plan to determine what works well and what changes might be needed to meet the new federal requirements proposed by EPA to improve visibility and prevent regional haze in national parks and wilderness areas.

Urban or regional haze, as opposed to specific health-based pollutants, is just beginning to be addressed as an important air quality problem. Resolution of the problem will require new strategies and multi-state and tribal cooperation. Historical clean air strategies may need to be revised so that standards for both health and clear air are met in the most efficient way possible.

Redesignation of Nonattainment Areas

Nonattainment of federal air quality standards imposes significant economic penalties on communities, including higher pollution control costs for new and existing businesses, economic growth constraints, and compromised public health. Two areas of the state, Yakima and Spokane, have not satisfied federal requirements for adopting clean air plans. These plans are past due and the state could face federal sanctions, including loss of federal transportation funds, for failing to meet its obligations. As long as an area remains listed in nonattainment, regardless of its measured air quality, prescriptive federal control measures stay in effect.

Toxic Air Pollutants

Air quality regulators have traditionally split air pollutants into two categories: criteria pollutants (six compounds for which federal ambient standards have been set) and toxic pollutants. Hundreds of toxic chemicals (totaling millions of pounds) are released into the air each year in Washington. No ambient standards and few emission limits have been established for these compounds. We have limited understanding of the potential effects on human health and the environment, the sources and quantity of emissions, and the ambient concentrations of toxics in Washington's air.

The public reacts emotionally and frequently to possible exposures to toxic air pollutants. Threats of cancer, reproductive disease, brain damage and other debilitating illnesses are associated with various toxic pollutants. Recent public outrage over toxics from industrial facilities has occurred in Northport and Port Angeles. Citizens have opposed the building of incinerators and other industrial plants because of perceived threats from toxics. In Washington, new sources of air emissions are reviewed for their health risks from toxics.

In order to develop a rational strategy for addressing these pollutants, Ecology is now working on a comprehensive evaluation of what is known about air toxics in Washington.

Agricultural Burning

Growers burn their fields to remove stubble after harvest and help control weeds and disease. However, this burning also produces substantial amounts of smoke that affects the health and quality of life of people in nearby population centers. Of the crops for which field burning is done, grass seed and wheat have drawn the most attention in recent years. In 1996, in response to complaints from the public and testimony from the medical community about the seriousness of smoke-related health effects, Ecology took action to reduce burning of grass fields. Ecology restricted the amount of burning by two-thirds, then evaluated and certified an alternative to burning.

For wheat and other crops, Ecology administers the agricultural burning permit system to reduce air pollution from field burning. In 1999, Ecology, the state Department of Agriculture, and the Association of Washington Wheat Growers entered into a voluntary agreement. The wheat industry agreed to reduce burning by 50 percent over the next seven years, so that in 2005, the amount of wheat stubble burning done will be half of what it was in 1998.

Ecology's decisions to reduce smoke emissions from agricultural field burning continue to generate heated and polarized reaction. Some clean air groups want a total ban now, and some grass seed growers, primarily through lawsuits, continue to oppose efforts to restrict burning. Ecology continues to defend its rule and to emphasize the certification of practical and reasonably available alternative waste removal methods.

Motor Vehicle Emission Check Program Changes

The motor vehicle Emission Check Program affects nearly 40 percent of the state's car and light truck owners. Because it affects so many people and requires them to take personal responsibility for their cars and pollution, Ecology has a responsibility to ensure that the program scores high on air quality, cost-effectiveness and public service tests.

Ecology staff evaluated the Emission Check Program during 1997 and part of 1998. The goal of the evaluation was to identify how to improve customer service while still achieving the needed emission reductions from motor vehicles. As a result of the evaluation findings, staff developed a package of program changes. Changes were recommended in the area of vehicle testing and methods of paying for testing.

The 1999 Washington State Legislature made one of the recommended changes to the program, eliminating testing of vehicles less than five and more than 25 years old. This change was made because newer cars now have much more efficient air pollution controls and most do not fail the test, while overall, repairs on cars more than 25 years old are not usually cost effective. In 2000, 1976 model year vehicles will be the oldest vehicles required to be tested, and 1996 models the newest.

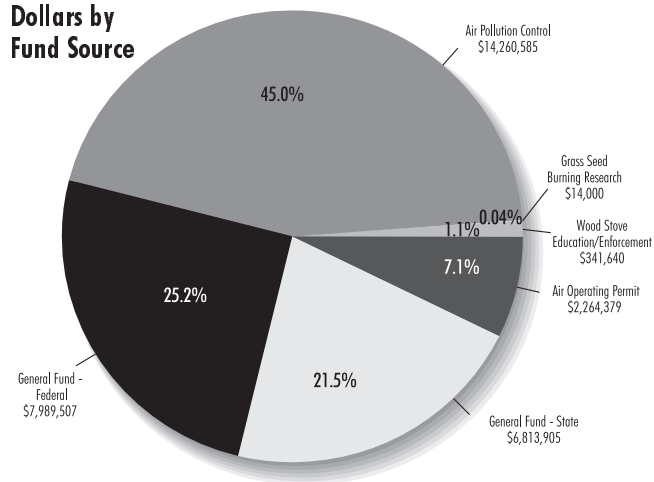
As a result of this change to the program, Ecology estimates a 15-20 percent reduction in the number of paid tests conducted. This means there will be less revenue for running the program. Because state law requires that the cost of the Emission Check Program be recovered from test fees, Ecology has increased the test fee from \$12 to \$15, effective December 31, 1999 to offset the loss of test revenue.

Air Quality Program Budget – Pre Initiative 695

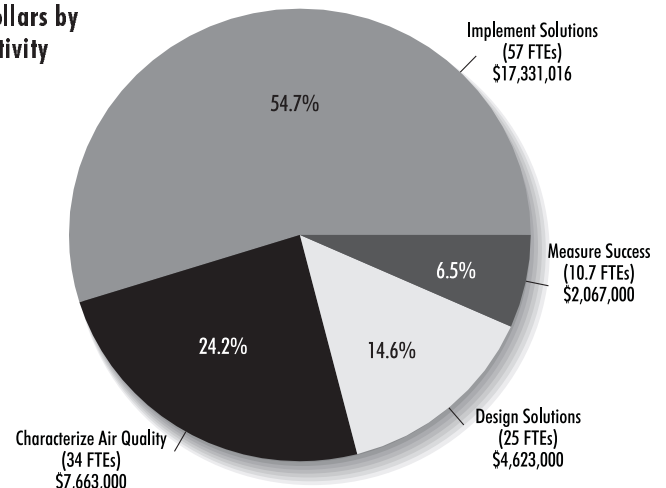
Budget: \$31,684,016; Staffing: 127 FTEs

Fund	Amount (\$)	Sources	Uses
Air Pollution Control	14,260,585	Fees collected for vehicle licenses; air registration fees; agriculture burning permits	Ambient air monitoring; grants to local air authorities; new source permits; modeling and meteorology; emission inventory
General Fund - State	6,813,905	Fees collected for vehicle emission inspections	Vehicle emission testing
General Fund- Federal	7,989,507	Federal grants	Grants to local air authorities for ambient air monitoring; emission inventory; modeling and meteorology
Air Operating Permit	2,264,379	Permit fees collected for air contaminant sources	Issuing permits to major air pollution sources; small business technical assistance
Woodstove Education and Enforcement	341,640	Fees on the retail sale of woodstoves and fireplaces	Enforcement and education on proper woodstove use; grants to local air authorities
Grass Seed Burning Research	14,000	Fees on the open burning of grasses grown for seed	Research on alternatives to grass seed burning

Air Program Dollars by Fund Source



Air Program Dollars by Activity



Air Quality Program Budget – Post Initiative 695

Budget: \$20,922,431; Staffing: 63 FTEs

Fund	Amount (\$)	Sources	Uses
Air Pollution Control	3,499,000	Fees collected from air registration fees; agriculture burning permits	New source permits; agricultural burning research; implementing registration program
General Fund - State	6,813,905	Fees collected for vehicle emission inspections	Vehicle emission testing
General Fund- Federal	7,989,507	Federal grants	Grants to local air authorities for ambient air monitoring; emission inventory; modeling and meteorology
Air Operating Permit	2,264,379	Permit fees collected for air contaminant sources	Issuing permits to major air pollution sources; small business technical assistance
Woodstove Education and Enforcement	341,640	Fees on the retail sale of woodstoves and fireplaces	Enforcement and education on proper woodstove use; grants to local air authorities
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